

## ABSTRACT

The charge detection device includes a floating diffusion, a  
reset transistor, a feed through shielding transistor, and a bias  
5 tracking voltage reference generator for biasing an output diode.

The reset feed through shielding transistor gate overlaps the  
reset transistor gate to minimize the reset feed through. The bias  
tracking voltage reference generator output is adjusted such as to  
set a predetermined reset time constant for the device and to  
10 optimize the detection node performance by minimizing the charge  
spill back during the reset transistor turning off interval.